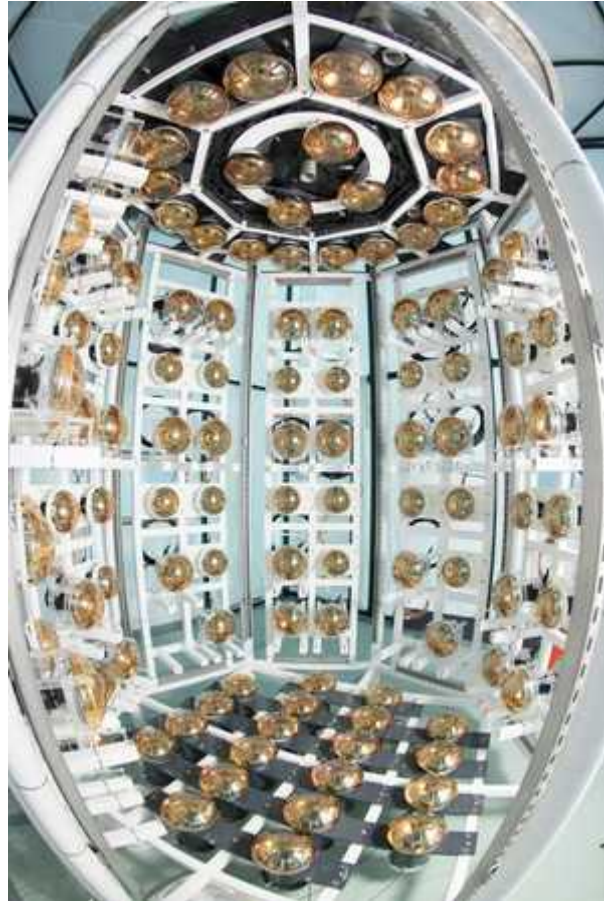




ANNIE: **Accelerator Neutrino Neutron Interaction Experiment**

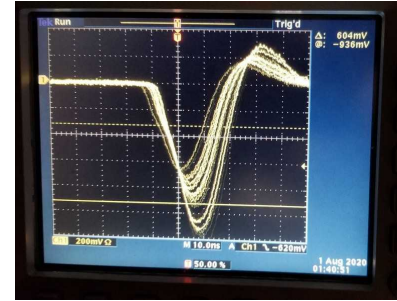
Vincent Fischer
on behalf of the ANNIE collaboration

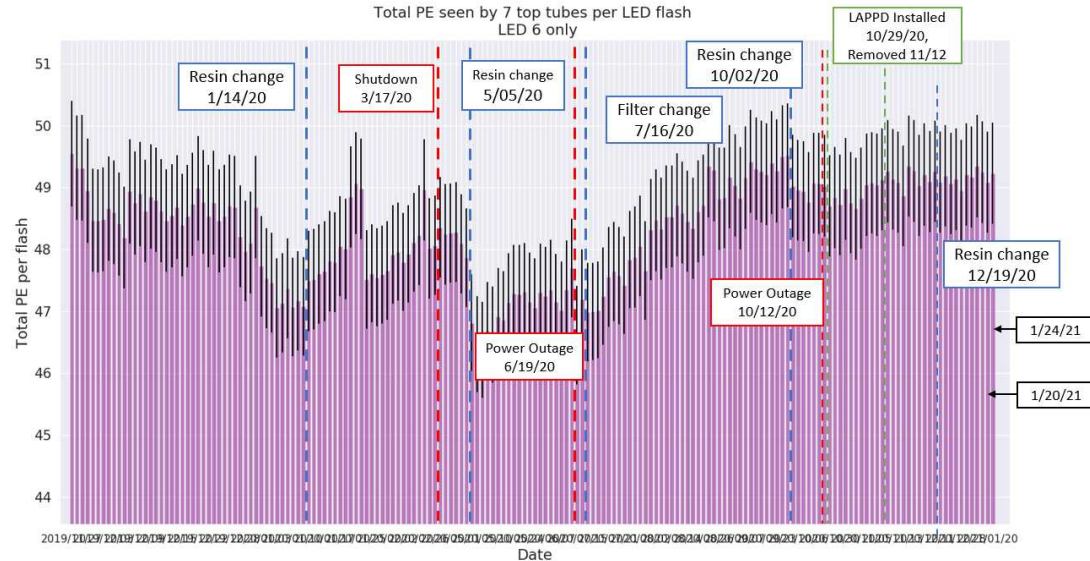
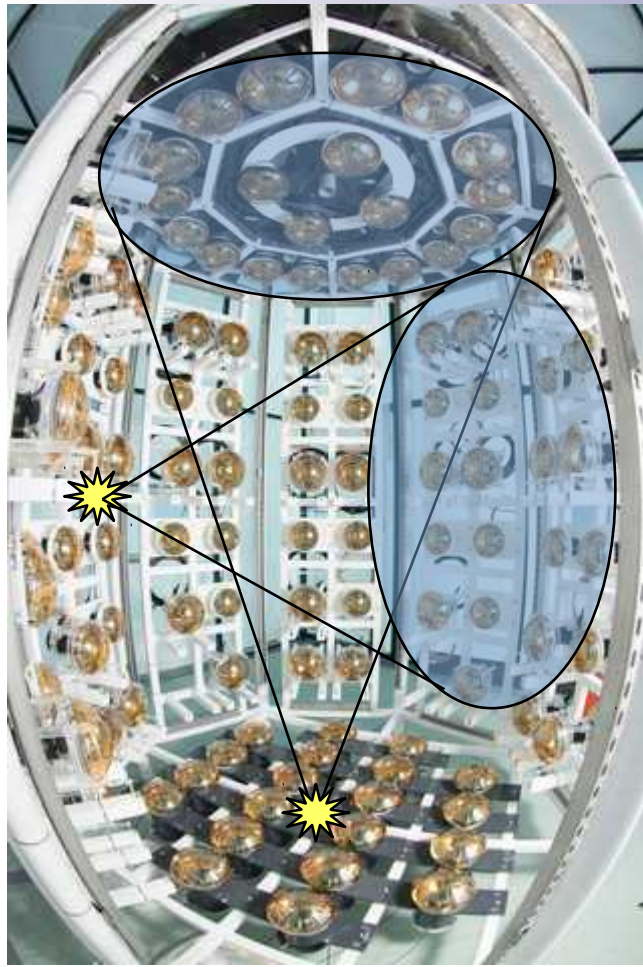


Since the last PMG meeting:

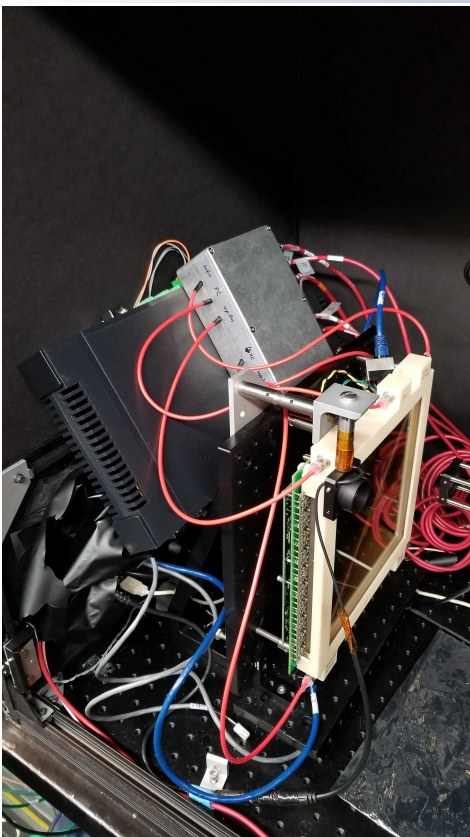
- Work on improving veto and MRD efficiencies
- LAPPD characterization ongoing at Lab 6 + second ORC readiness
- Continuous data taking and 24/7 shifts

- One tank PMT seemed noisier than before and seem to have modified the pedestal of its ADC channels (VME card)
- PMT was turned off and disconnected but the VME channel is causing issues and creating undesired and empty additional readout windows
- This increases the file size and the amount of memory used by the VME computers
- This issue doesn't occur regularly and seem to fix itself over time
- It is being investigated right now (in both software and hardware)
- Data taking is still stable and we can record beam data properly but it requires more effort by the experts to keep the detector stable when the issue happens

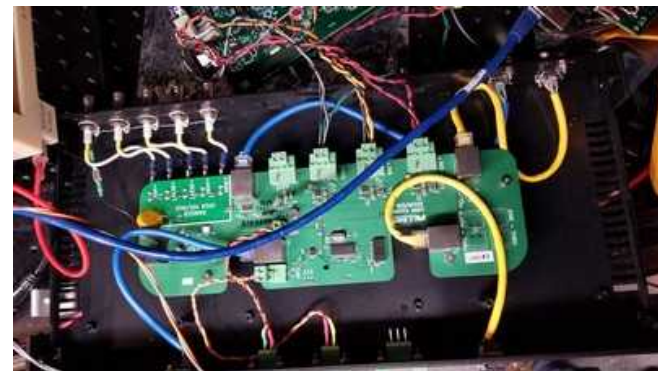




- Water flow stable (no filters being clogged)
- Water temperature dropped from ~20 to ~12 degrees Celsius due to low outside temperature → No expected effect on quality
- Heaters were turned on and the temperature increased gradually



- Attempts made to power LAPPD (electronics and HV) through a LVHV (low/high voltage) board
- Initial test highlighted a bad power supply, second test highlighted the need to redesign some components on the boards (voltage regulators, diodes)
 - We have a new power supply and the changes are expected to be done this week
- Readiness for second ORC:
 - Use high density cables (12 wires, waterproof jacket) to power and read data from LAPPD in light-tight enclosure
 - Read data from experiment-ready DAQ hardware and software
- Second setup installed to study timing



LVHV board

- ANNIE started taking “physics data” since the last PMG meeting. Thanks to BNB for sending us a high intensity beam

ANNIE Phase II

Date: 2021/1/21-10:37

ANNIE Run: 2421 (Beam)

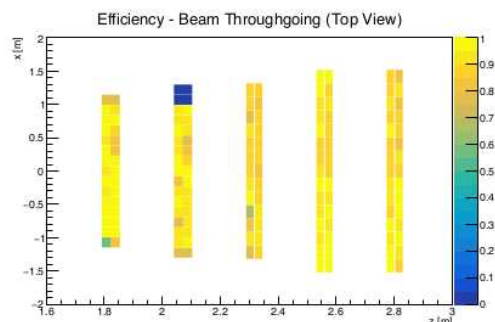
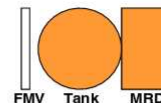
ANNIE Event: 333540

PMTs: 30 hits / 2562 p.e.

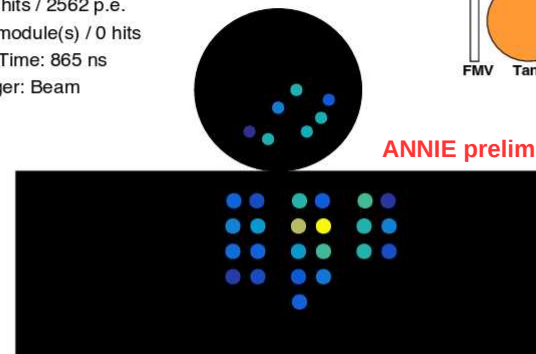
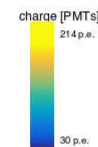
LAPPDs: 0 module(s) / 0 hits

Cluster Time: 865 ns

Trigger: Beam



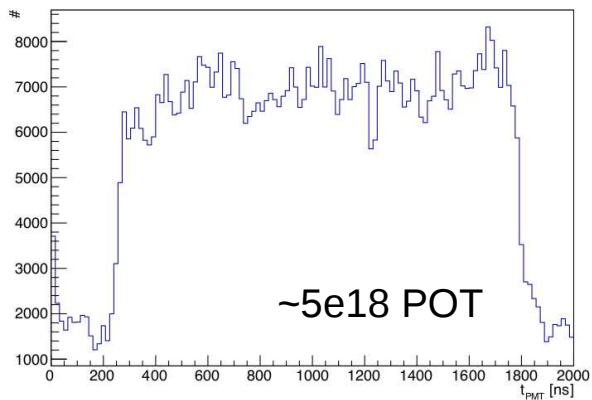
Preliminary MRD efficiency



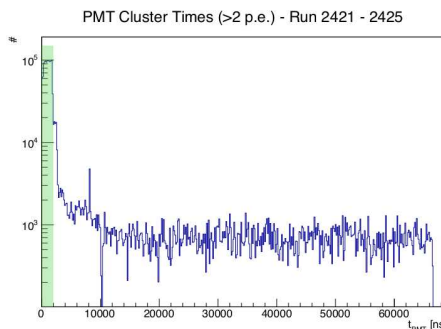
ANNIE preliminary

ANNIE preliminary

PMT Cluster Times (>2 p.e.) - Run 2421 - 2425 (~180 hours)

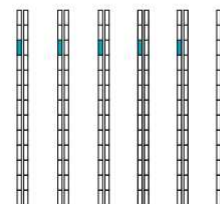


~5e18 POT



Extended readout (70 us)

MRD Side view



MRD Top view

